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FIG. 1

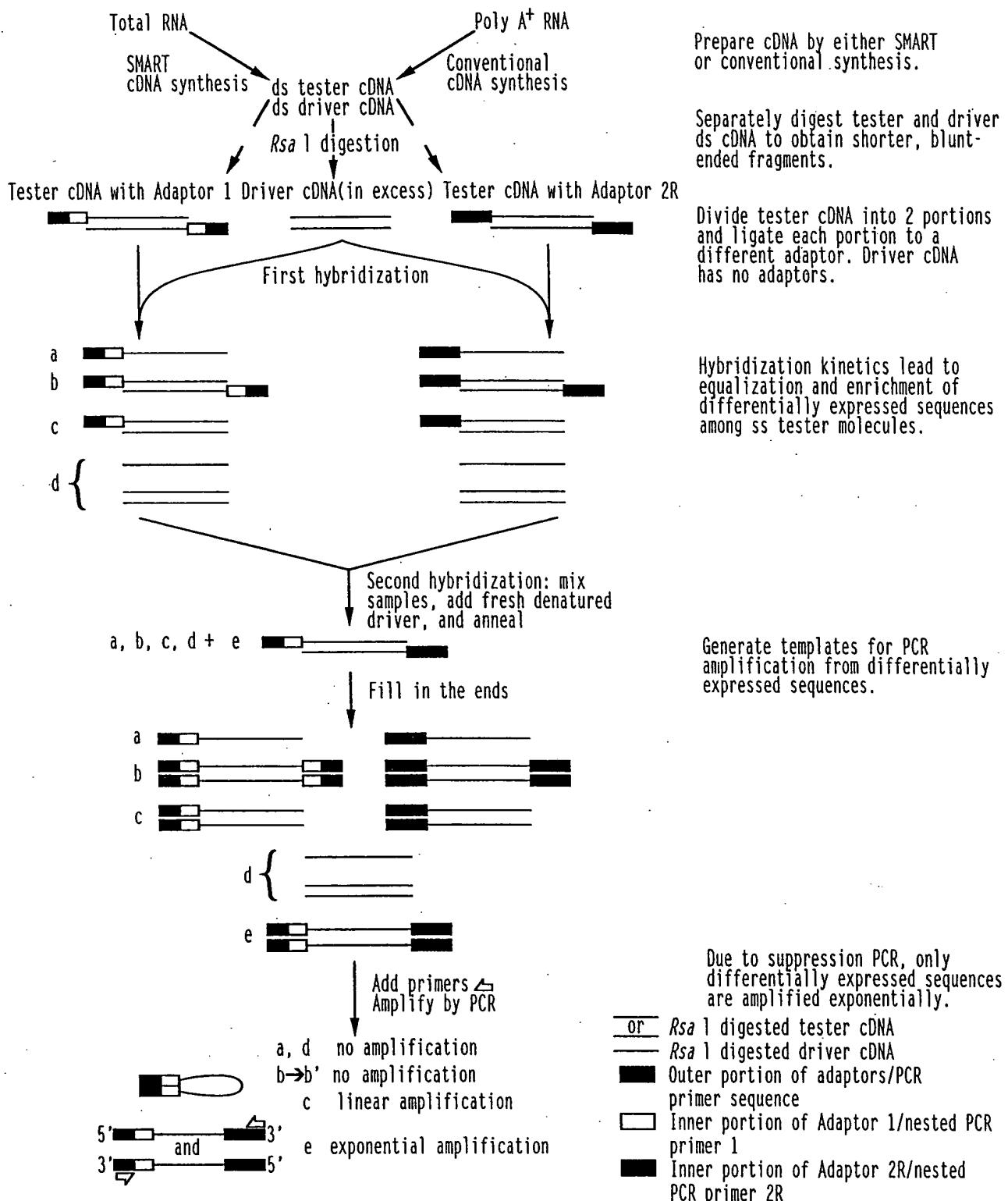


FIG. 2A

mICACC-1 cDNA Translated Sequence
 Sequence Range: 1 to 2931

1	ctgcagg
8	atggaatcttgaagagtcgtcttccttgcacccac
	M E S L K S P V F L L I L H L
53	ctggaaaggaggttctgagtggatccctcatccaactgaacaacaac
	L E G V L S E S L I Q L N N N
98	ggctatgagggcatcgatcgccatagaccacgacgtgccggaa
	G Y E G I V I A I D H D V P E
143	gatgaaggcccttattcaacacataaaggacatggtactcaggcc
	D E A L I Q H I K D M V T Q A
188	tctccataacctgtttgaagctacaggaaaaagatttacttcaa
	S P Y L F E A T G K R F Y F K
233	aatgttgcattttgattcccgagagactggaaaggcaaagcctgaa
	N V A I L I P E S W K A K P E
278	tatacgaggccaaaacttgaaaccttcaaaaacgctgatgtcctt
	Y T R P K L E T F K N A D V L
323	gtatcaacaaccagccctctaggcaatgatggccctacaccgaa
	V S T T S P L G N D E P Y T E
368	catataggagcatgtggagaaaagggatcaggattcacctgact
	H I G A C G E K G I R I H L T
413	cctgacttcttagcagggaaagaagctgactcagtatggccacaa
	P D F L A G K K L T Q Y G P Q
458	gacaggacccatgtccatgagtggctcactccatgggagtg
	D R T F V H E W A H F R W G V
503	ttaatgaataacaacgacgagaagtttacttatccaaagga
	F N E Y N N D E K F Y L S K G
548	aaaccccaagcagtggatgttccatggacttccatgggatgg
	K P Q A V R C S A A I T G K N
593	caagttcgccgtgcaggaggcagtttatcaactacggaaag
	Q V R R C Q G G S C I T N G K
638	tgtgtaatcgacagatcacccaaacgagaaggcttccatcatgtt
	C V I D R V T G L Y K D N C V
683	tttgcattccatgacacccaaacgagaaggcttccatcatgtt
	F V P D P H Q N E K A S I M F
728	aacccaaatatcaattctgtgggtgaattctgtacagaaaaat
	N Q N I N S V V E F C T E K N
773	cacaatcaagaagccccaaatgacaaaaccaacgtcaatctc
	H N Q E A P N D Q N Q R C N L
818	cgaaggacgtggaaagtcatccaggaatctgaggacttcaagcaa
	R S T W E V I Q E S E D F K Q
863	accactcccatgacagcccagccacctgcacccacccatctcactg
	T T P M T A Q P P A P T F S L
908	ctgcaaaattggacaaaatgtgtgcttagttcttgataagtcc
	L Q I G Q R I V C L V L D K S
953	gggagcatgctgaacgatgatcgtcttaaccgaatgaatcaggca
	G S M L N D D R L N R M N Q A
998	agccggctttcctgctgcagactgtggagcaggatcctgggtc
	S R L F L L Q T V E Q G S W V

FIG. 2B

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1043 gggatggtgacctttgacagtgcctatgtacaaagcgaaactc
    G M V T F D S A A Y V Q S E L
1088 aaacagttaacagtggtgctgacagagatctgctgatcaagcac
    K Q L N S G A D R D L L I K H
1133 ttacccacagtatctgcaggaggacatctatatgctctggcctt
    L P T V S A G G T S I C S G L
1178 cggacacgcatttacagtgataaagaagaagtatccaactgtatgga
    R T A F T V I K K K Y P T D G
1223 tctgaaattgtgctgaccgtgggaggacaacaccattagc
    S E I V L L T D G E D N T I S
1268 agctgcttgcacctggtaagcagagcggggccatcatccataca
    S C F D L V K Q S G A I I H T
1313 gtggccctgggaccggctgcccataaagagcttgagcagctgtcc
    V A L G P A A A K E L E Q L S
1358 aaaatgacaggaggcctgcagacatactcttcggatcagggtcag
    K M T G G L Q T Y S S D Q V Q
1403 aacaatggcttggatgcttcgcagcactctccctcaggaaat
    N N G L V D A F A A L S S G N
1448 gcggcgatcgtcagcactccatccagctggagagcaggggagtt
    A A I A Q H S I Q L E S R G V
1493 aatctccagaataaccaatggatgaatggctcagtgatcgtggac
    N L Q N N Q W M N G S V I V D
1538 agctcggtggcaaggacacccctgtttcttatcacctggacaacg
    S S V G K D T L F L I T W T T
1583 catcctcctacaatatttatctggatccagcggagtggaaacaa
    H P P T I F I W D P S G V E Q
1628 aatggtttatactagacacaaccactaagggtggctacccaa
    N G F I L D T T K V A Y L Q
1673 gtcccaggcacggctaagggtggctttggaaatacagcattcaa
    V P G T A K V G F W K Y S I Q
1718 gcgagctcacagacttcaccttgactgtcacccgtcagca
    A S S Q T L T L T V T S R A A
1763 agtgctacactgcctccttattacagtgacccggtagtgaataag
    S A T L P P I T V T P V V N K
1808 aacacaggaaattccccagccctgtaaacagtgtatgcaaggatt
    N T G K F P S P V T V Y A S I
1853 cgccaaggaggcctcgccctatttcaggggccagcgtcacagccttg
    R Q G A S P I L R A S V T A L
1898 attgaatctgtgaatggaaaaacagtaaccctggattactggat
    I E S V N G K T V T L E L L D
1943 aacggagcagggtgccatgccaccaagaatgatgggtctactca
    N G A G A D A T K N D G V Y S
1988 aggtttttacagctttgatgcaaattggtagatacagcgtaaaa
    R F F T A F D A N G R Y S V K
2033 atatggctctgggaggagtacttcagacacagacagagcagca
    I W A L G G V T S D R Q R A A
2078 cctccgaagaacacagagccatgtacatagatggctggattgaggat
    P P K N R A M Y I D G W I E D
2123 ggtgaagtaagaatgaacccaccacgtcctgaaactagttatgtt
    G E V R M N P P R P E T S Y V
  
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FIG. 2C

2168 caagacaaggcagctgtgcttcagcaggacatcttcagggggatcg
Q D K Q L C F S R T S S G G S
2213 tttgtggccaccaatgtccccgcagcagctccattcctgacctc
F V A T N V P A A A P I P D L
2258 ttcccaccctgtcaaatcaactgacacctgaaggccagcatccaaggg
F P P C Q I T D L K A S I Q G
2303 cagaacctggtaatctgacgtggacggctctgggatgactac
Q N L V N L T W T A P G D D Y
2348 gaccacgggagagcttccaactacatcatccgaatgagcaccagt
D H G R A S N Y I I R M S T S
2393 atcgttgcatttcagggaccactcaacacctcaactccaagtgaac
I V D L R D H F N T S L Q V N
2438 actaccggctttatccccaaagaggccagctctgaggaaatcttt
T T G L I P K E A S S E E I F
2483 gagtttgaactgggaggcaacactttggaaatggcacagatatc
E F E L G G N T F G N G T D I
2528 ttcatgttatccaggctgtggataagtccaatctgaaatcagaa
F I A I Q A V D K S N L K S E
2573 atctccaacattgcacgggtgtctgtgttcatccccgctcaggag
I S N I A R V S V F I P A Q E
2618 ccgcccattccgaagactcaactcccccttgcctgacatcagc
P P I P E D S T P P C P D I S
2663 atcaacagcaccattcctggcatccacgtgctgaagataatgtgg
I N S T I P G I H V L K I M W
2708 aagtggctagggaaatgcaggtgacacttaggttgcactga
K W L G E M Q V T L G L H *

2750 attttcaggcaagaaatcaaccagtcatcattccttcactggagaat

2795 tttctaaaaatgtacttttagacttcctgttagggggcggtatagta

2840 acactcgaagctgtaaaactgggtctgggtgcattaaaaattatc

2885 tgttcaaatacaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa

2930 aa

FIG. 3A

CLUSTAL W (1.82) sequence alignment of mICACC-1 and bovine CACC (b-CACC)

mICACC-1: MESLKSPVFLILHLLEGVLSESLIQLNNNGYEGIVIAIDHDVPEDEALIQHIKDMVTQA 60
b-CACC: MVPRLTIVLFLTLHLLPG-MKSSMVNLINNGYDGIVIAINPSVPEDEKLIQNIKEMVTEA 59

mICACC-1: SPYLFEATGKRFYFKNVAILIPESWKAKPEYTRPKLETFKNADVLVSTTSPLGNDEPYTE 120
b-CACC: STYLFHATKRRVYFRNVSILIPMTWKSKESEYLMPKQESYDQAEVIVANPYLKHGDDPYTL 119

mICACC-1: HIGACGEKGIRIHLTPDFLAGKKLTQYGPQDRTFVHEWAHFRWGVFNEYNNDEKFYLSK- 179
b-CACC: QYGRGCEKGQYIHFTPNFLLTNLPIYGSRGRAFVHEWAHLRGIFDEYNGDQPFYISRR 179

mICACC-1: GKPQAVRCSAAITGKNQVRRQCQGGSCITNGKCVIDRTGKYKDNCVFPDPHQNEKASIM 239
b-CACC: NTIEATRCSTHITGTNVIVKCQGGSCITR-PCRRDSQTGLYEAKCTFYPEKSQTARESIM 238

mICACC-1: FNQNINSVVEFCTEKHNHQEAPNDQNQRCNLRSTWEVIQESEDFKQTTPMTAQPP--APT 297
b-CACC: FMQSLHSVTEFCTEKTHNVEAPNLQNKMCNGKSTWDVIMNSTDFQNTSPTEMNPPTQPT 298

mICACC-1: FSLLQIGQRIVCLVLDKSGSMLNDDRLNRMNQASRLFLLQTVEQGSWVGMVTFDSAAYVQ 357
b-CACC: FSLLKSKQRVVCLVLDKSGSMSSEDRLFRMNQAAELFLIQIIIEKGSLVGMVTFDSVAEIR 358

mICACC-1: SELKQLNSGADRDLLIKHLPTVSAGGTSICSGLRTAFT-VIKKKYPTDGSEIVLLTDGED 416
b-CACC: NNLTKITDDNVYENITANLPQEANGGTSICRGLKAGFQAIQSQQSTSGSEIILTDGED 418

mICACC-1: NTIISCFDLVKQSGAIIHTVALGPAAKELEQLSKMTGGLQTYSSDQVQNNGLVDAFAAL 476
b-CACC: NEIHSCIEEVKQSGVIIHTIALGPSAAKELETLSMDTGGHRYANKDIN--GLTNAFSRI 476

mICACC-1: SSGNAAIAQHSIQLESRGVNLQNNQWMNGSVIVDSSVGKDTLFLITWTTHPPTIFIWDP 536
b-CACC: SSRSGSITQQTIQLESKALAITEKWWNGTVPVDSTIGNDFFVVTIKKPEILLQDPK 536

mICACC-1: G--VEQNGFILD--TKVAYLQVPGTAKVGFWKYSIQ--ASSQTLTLTVTSRAASATLP 590
b-CACC: GKKYKTSDFKEDKLNHSARLRIPTGIAETGTWTYSLLNNHASPQILTVTTRARSPTP 596

mICACC-1: PITVTPVNVKNTGKFSPVTVYASIRQGASPILRASVTALIESVNGKTVTLELLDNGAGA 650
b-CACC: PVTATAHMSQNTAHYPSPVIVYAQVSQGFLPVLGINVTAIIETEDGHQVTLELWDNGAGA 656

mICACC-1: DATKNDGVYSRFTAFDANGRYSVKIWLGGVTSDRQRAAPPKNRAMYIDGWIEDGEVRM 710
b-CACC: DTVKNDGIYSRYFTDYGNGRYSLKVHAEARNNTARLSLRQPQNKALYIPGYIENGKIL 716

mICACC-1: NPPRPETS--YVQDKQLCFSRTSSGGSFVATNVPAAPAPIPDLFPPCQITDLKASIQQN 768
b-CACC: NPPRPEVKDDLAKAEIEDFSRLTSGGSFTVSGAPPGN-HPSVLPPNKIIDLEAKFK-EDH 774

FIG. 3B

mICACC-1: VNLTWTAPGDDYDHGRASNYIIRMSTSIVDLRDHFNTSLQVNNTGLIPKEASSEEIFEFE 828
b-CACC: IQLSWTAPANVLDKGKANSYIIRISKSFLDLQKDFDNATLVNTSSLKPKEAGSDENFEFK 834

mICACC-1: LGGNTFGNGTDIFIAIQAVDKSNLKSEISNIARVSFIPAQEPPPIPEDSTPPCPDISINS 888
b-CACC: PEPFRIENGTNFYIAVQAINEANLTSEVSNIAQAIKFIP-----MPEDSVP-ALGTKISA 888

mICACC-1: TIPGIHVLKIMWKWLGEMQVTLGLH 913
b-CACC: INLAIFALAMILSIV----- 903

hICACC-2 Translated Sequence
Sequence Range: 1 to 3190

FIG. 4A1

1 cttcttggtcttaaacccttgcagtt
30 cagraagaaaccatctgcatccatattgaaaacctgacacaatg
75 tatgcagcaggctcagtgtgagtgaactggaggctctacaac
120 atgacccaaaggagcattgcaggtcctattgcaacctgaagtt
M T Q R S I A G P I C N L K F
165 gtgactctcctgggtgcctaagttcagaactcccattcctggga
V T L L V A L S S E L P F L G
210 gctggagtacagctcaagacaatgggtataatggattgctcatt
A G V Q L Q D N G Y N G L L I
255 gcaattaaatcctcaggtacactgagaatcagaacctcatctcaaac
A I N P Q V P E N Q N L I S N
300 attaaggaaatgataactgaagcttcatttacctatttaatgct
I K E M I T E A S F Y L F N A
345 accaagagaagagtattttcagaaatataaagatttaataacct
T K R R V F F R N I K I L I P
390 gccacatggaaagctaataaataacagcaaaataaaacaagaatca
A T W K A N N N S K I K Q E S
435 tatgaaaaggcaaattgtcatagtgactgactggtatagggcacat
Y E K A N V I V T D W Y R A H
480 ggagatgatccatacacccctacaatacagagggtgtggaaaagag
G D D P Y T L Q Y R G C G K E
525 ggaaaatacattcatttcacacctaattcctactgaatgataac
G K Y I H F T P N F L L N D N
570 ttaacagctggctacggatcagcaggccgagtgttgcattgaa
L T A G Y G S R G R V F V H E
615 tgggcccacctccgtgggtgtgtcgatgagtataacaatgac
W A H L R W G V F D E Y N N D
660 aaacctttctacataaatggcaaaatcaaattaaagtgacaagg
K P F Y I N G Q N Q I K V T R
705 tgttcatctgacatcacaggcatttgtgtgaaaaaggcct
C S S D I T G I F V C E K G P
750 tgcccccaagaaaactgtattattagtaagctttaaagaagga
C P Q E N C I I S K L F K E G
795 tgcaccttatctacaatagcacccaaagtgcactgcatcaata
C T F I Y N S T Q S A T A S I
840 atgttcatgcgaagtttatcttgcgtggtaatttgcataatgca
M F M R S L S S V V E F C N A
885 agtacccacaaccaagaagcaccaaaacctacagaaccagatgtgc
S T H N Q E A P N L Q N Q M C
930 agcctcagaagtgcattggatgtaatcacagactctgacttt
S L R S A W D V I T D S A D F
975 caccacagcttccatgaacgggactgagctccacccctcccc
H H S F P M N G T E L P P P P
1020 acattctcgcttgcgttagaggctggtaacaaagtggctgttagtg
T F S L V E A G D K V V C L V

FIG. 4A2

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1065 ctggatgcgtccagcaagatggcagaggctgacagactccttcaa
  L D A S S K M A E A D R L L Q
1110 ctacaacaagccgcagaattttatgtgcagattgttcaaatt
  L Q Q A A E F Y L M Q I V E I
1155 cataccttcgtggcattgccagttcgacagcaaaggagagatc
  H T F V G I A S F D S K G E I
1200 agagcccagctacaccaaattaacagcaatgtatcgaaagttg
  R A Q L H Q I N S N D D R K L
1245 ctggttcatatctgcccaccactgtatcagctaaacagacatc
  L V S Y L P T T V S A K T D I
1290 agcatttgcgttgcggcttaagaaaggatttgcgggtggaaaaaa
  S I C S G L K K G F E V V E K
1335 ctgaatggaaaagcttatggctgtatcgtatattgtgaccagc
  L N G K A Y G S V M I L V T S
1380 ggagatgataagcttgcggcaattgcgttaccactgtgcgc
  G D D K L L G N C L P T V L S
1425 agtgggtcaacaattactccattgcctgggtcatctgcagcc
  S G S T I H S I A L G S S A A
1470 ccaaacttgcggagaattatcacgtcttacaggaggtttaagttc
  P N L E E L S R L T G G L K F
1515 tttgttccagatataatcaaactccaatagcatgattgtatcgtt
  F V P D I S N S N S M I D A F
1560 agtagaaatttgcgttgcggactggagacattttccagcaacatatt
  S R I S S G T G D I F Q Q H I
1605 cagcttgcggaaatgtacaggtaaaatgtcaaaccatcaccatcatt
  Q L E S T G E N V K P H H Q L
1650 aaaaacacagtgactgtggataataactgtggggcaacgacactatg
  K N T V T V D N T V G N D T M
1695 tttcttagttacgtggcaggccagtgtgcctcctgagattatatta
  F L V T W Q A S G P P E I I L
1740 tttgtatcctgatggacgaaaataactacacaaaataatttatcacc
  F D P D G R K Y Y T N N F I T
1785 aatctaactttcggacagctagtctttggattccaggaaacagct
  N L T F R T A S L W I P G T A
1830 aaggcctggcactggacttacacccctgaacaataccatcattct
  K P G H W T Y T L N N T H H S
1875 ctgcaagccctgaaagtgcacagtgcacccctcgtgcctccaactca
  L Q A L K V T V T S R A S N S
1920 gctgtccccccagccactgtggaaaggcccttgcggaaagagacgc
  A V P P A T V E A F V E R D S
1965 ctccatccatccatcctgtatgattatgcacatgtgaaacag
  L H F P H P V M I Y A N V K Q
2010 ggattttatccatccatcttaatgccactgtcactgccacagttgag
  G F Y P I L N A T V T A T V E
2055 ccagagactggagatccctgttacgtgcggactccctgatgatgga
  P E T G D P V T L R L L D D G
2100 gcagggtgtatgttataaaaaatgtggaaattactcgaggtat
  A G A D V I K N D G I Y S R Y
2145 ttttctccttgctgcaatggtagatatacgcttgcattgtgaaatgtcat
  F F S F A A N G R Y S L K V H

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FIG. 4A3

2190 gtcataatcactctcccaagcataaggcacccagccactcttattcca
V N H S P S I S T P A H S I P
2235 gggaggtcatgctatgtatgtaccaggtaacacagcaaacggtaat
G S H A M Y V P G Y T A N G N
2280 attcagatgaatgctccaaggaaatcagtaggcagaaatgaggag
I Q M N A P R K S V G R N E E
2325 gagcggaaagtggggctttagccgagtcagtcaggaggctccctt
E R K W G F S R V S S G G S F
2370 tcagtgtgggagttccagctggccccccaccctgatgtgtttcca
S V L G V P A G P H P D V F P
2415 ccatgcaaaattattgaccttggaaagctgtaaaagttagaagaggaa
P C K I I D L E A V K V E E E
2460 ttgacccttatcttggacacgacctggagaagactttgatcagggc
L T L S W T A P G E D F D Q G
2505 caggctacaagctatgaaataagaatgagtaaaagtctacagaat
Q A T S Y E I R M S K S L Q N
2550 atccaagatgactttaacaatgctattttagtaaatacatcaaag
I Q D D F N N A I L V N T S K
2595 cggaaatccctcagcaagctggcatcaggagatattacggtctca
R N P Q Q A G I R E I F T F S
2640 ccccagatttccacgaatggacacatcagccaaatggagaa
P Q I S T N G P E H Q P N G E
2685 acacatgaaagccacagaatttatgttgcataacagcataatggat
T H E S H R I Y V A I R A M D
2730 aggaactccttacagtctgttatctaacattgcccaggcgct
R N S L Q S A V S N I A Q A P
2775 ctgttattcccccaattctgatcctgtacctgcccagagattat
L F I P P N S D P V P A R D Y
2820 cttatattgaaaggagtttaacagcaatgggtttaggaatc
L I L K G V L T A M G L I G I
2865 atttgccttattatagttgtgacacatcatactttaagcaggaaa
I C L I I V V T H H T L S R K
2910 aagagagcagacaagaaagagaatggaacaaaattattataa
K R A D K K E N G T K L L *

2952 ataaatatccaaagtgtcttccttcttagatataagacccatggc

2997 ctgcactacaaaacataactaacaaagtcaaaatcatcaaaa

3042 ctgttattaaatgcattgagtttgtacaatacagataagattt

3087 tacatggtagatcaacaaattcttttggggtagattagaaaac

3132 cttacacttggctatgaacaaataataaaaaattattctttaaaa

3177 aaaaaaaaaaaaaaa 3190

hICACC-1

FIG. 4B1

Sequence Range: 1 to 2745

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1 atggggccatctaagagttctgtgttacccatgttccaccc
   M G P F K S S V F T L I L H L
46 ctagaaggggccctgagtaattcactcattcagctgaacaacaat
   L E G A L S N S L I Q L N N N
91 ggctatgaaggcattgtcggtcaatcgacccaaatgtgccagaa
   G Y E G I V V A I D P N V P E
136 gatgaaaacactcattcaacaaataaaggacatggtgacccaggca
   D E T L I Q Q I K D M V T Q A
181 tctctgtatctgtttgaagctacaggaaagcgattttatttcaaa
   S L Y L F E A T G K R F Y F K
226 aatgttgcattttgattcctgaaacatggaagacaaaggctgac
   N V A I L I P E T W K T K A D
271 tatgtgagacaaaaacttgagacacctacaaaaatgctgatgttctg
   Y V R P K L E T Y K N A D V L
316 gttgctgagtctactcctccaggtaatgatgaaacctacactgag
   V A E S T P P G N D E P Y T E
361 cagatggcaactgtggagagaagggtgaaaggatccacctcact
   Q M G N C G E K G E R I H L T
406 cctgatttcattgcaggaaaaagtttagctgaaatatggaccacaa
   P D F I A G K K L A E Y G P Q
451 ggttagggcattgtccatgagtggtcatctacgatggggagta
   G R A F V H E W A H L R W G V
496 tttgacgactacaataatgatgagaaattctacttatccatgg
   F D E Y N N D E K F Y L S N G
541 agaatacaagcagtaagatgtcagcaggattactggtaacaaat
   R I Q A V R C S A G I T G T N
586 gtagtaaagaagtgtcagggaggcagctgttacacaaaagatgc
   V V K K C Q G G S C Y T K R C
631 acattcaataaagtawcaggactctatgaaaaaggatgtgagtt
   T F N K V T G L Y E K G C E F
676 gttctccaatcccggcagacggagaaggctctataatgttgc
   V L Q S R Q T E K A S I M F A
721 caacatgttattctatagttgaattctgtacagaacaaaaccac
   Q H V D S I V E F C T E Q N H
766 aacaaagaagctccaaacaagaaaaatcaaaaatgcaatctccga
   N K E A P N K Q N Q K C N L R
811 agcacatggaaagtgtatccgtgattctgaggactttaagaaaaacc
   S T W E V I R D S E D F K K T
856 actcctatgacaaacacagccacaaatcccacccattctgctg
   T P M T T Q P P N P T F S L L
901 cagattggacaaagaattgtgttttagtccttgacaaaatctgga
   Q I G Q R I V C L V L D K S G
946 agcatggcgactggtaaccgcctcaatcgactgaatcaagcaggc
   S M A T G N R L N R L N Q A G
991 cagctttcctgctgcagacagttgagctgggtcctgggtgg
   Q L F L L Q T V E L G S W V G
1036 atggtgacatttgacagtgtgttgcacccatgtacaaagtgaactcata
   M V T F D S A A H V Q S E L I
1081 cagataaaacagtggcagtgcacaggacacactcgccaaaagatta
   Q I N S G S D R D T L A K R L
1126 cctgcagcagcttcaggagggacgtccatctgcagcgggctcga
   P A A A S G G T S I C S G L R

```

FIG. 4B2

1171 tcggcattactgtgatttaggaagaaaatatccaactgatggatct
S A F T V I R K K Y P T D G S
1216 gaaattgtgctgctgacggatggggaaagacacactataagtggg
E I V L L T D G E D N T I S G
1261 tgctttaacgaggtaaaacaaagtggccatcatccacacagtc
C F N E V K Q S G A I I H T V
1306 gctttggggccctctgcagctcaagaactagaggagctgtccaaa
A L G P S A A Q E L E E L S K
1351 atgacaggaggtttacagacatatgcttcagatcaagttcagaac
M T G G L Q T Y A S D Q V Q N
1396 aatggcctcattgatgctttggggcccttcatcagggaaatggg
N G L I D A F G A L S S G N G
1441 gctgtcttcagcgcctccatccagcttggagagtaagggattaacc
A V S Q R S I Q L E S K G L T
1486 ctccagaacagccagtgatggatggcacagtgatcgtggacagc
L Q N S Q W M N G T V I V D S
1531 accgtggaaaggacactttttttatcacctggacaacgcag
T V G K D T L F L I T W T T Q
1576 cctcccaaattcctctggatcccagttggacagaagcaaggt
P P Q I L L W D P S G Q K Q G
1621 ggctttgttagtggacaaaaacacaaaaatggcctacccatccaaatc
G F V V D K N T K M A Y L Q I
1666 ccaggcattgctaagggtggacttggaaatacagtgatcgtcaagca
P G I A K V G T W K Y S L Q A
1711 agctcacaaacccctgaccctgactgtcacgtcccgtgcgtccaaat
S S Q T L T L T V T S R A S N
1756 gctaccctgcctccaattacagtgacttccaaaacgaacaaggac
A T L P P I T V T S K T N K D
1801 accagcaaattccccagccctctggtagtttatgcaaatattcgc
T S K F P S P L V V Y A N I R
1846 caaggagcctcccaaattctcagggccagtgatcgtcacagccctgatt
Q G A S P I L R A S V T A L I
1891 gaatcagtgaatggaaaaacagttacacgttggactactggataat
E S V N G K T V T L E L L D N
1936 ggagcagggtgtatgactaaggatgacgggtgtactcaagg
G A G A D A T K D D G V Y S R
1981 tatttcacaacttatgacacgaatggtagatacagtgtaaaagt
Y F T T Y D T N G R Y S V K V
2026 cgggctctggaggagttAACGCCAGAGGTGATAACCC
R A L G G V N A A R R R V I P
2071 cagcagagtggagcactgtacatacctggctggattgagaatgat
Q Q S G A L Y I P G W I E N D
2116 gaaatccaatggaaatccaccaagacacactgaaattaataaggatgat
E I Q W N P P R P E I N K D D
2161 gttcaacacaagcaagtgtgttccatcgtccatcacctgatctc
V Q H K Q V C F S R T S S G G
2206 tcatttggcttctgtatgtcccaaattcgtccatcacctgatctc
S F V A S D V P N A P I P D L
2251 ttcccacctggccaaatcaccgacctgaaggcggaaattcacggg
F P P G Q I T D L K A E I H G
2296 ggcagtctcattaatctgacttggacagctccctggggatgattat
G S L I N L T W T A P G D D Y
2341 gaccatggaaacagctcacaagtatcatcgaataagtacaagt
D H G T A H K Y I I R I S T S

FIG. 4B3

2386 attcttgatctcagagacaagtcataatgaatctcttcaagtgaat
I L D L R D K F N E S L Q V N
2431 actactgctctcatcccaaaggaaagccaactctgaggaagtcttt
T T A L I P K E A N S E E V F
2476 ttgtttaaccagaaaaacattactttgaaaatggcacagatctt
L F K P E N I T F E N G T D L
2521 ttcattgcttattcaggctgttgataaggctcgatctgaaatcagaa
F I A I Q A V D K V D L K S E
2566 atatccaacattgcacgagtatcttggatttcctccacagact
I S N I A R V S L F I P P Q T
2611 ccggccagagacacaccttagtcctgatgaaacgtctgccttgcct
P P E T P S P D E T S A P C P
2656 aatattcatatcaacagcaccattcctggcattcacattttaaaa
N I H I N S T I P G I H I L K
2701 attatgtgaaagtggataggagaactgcagctgtcaatagcctag 2745
I M W K W I G E L Q L S I A *

FIG. 5A

CLUSTAL W (1.82) multiple sequence alignment of mouse and human ICACC proteins

mICACC-1: --MESLKSPVFLLILHLLEGVLSESL-----IQLNNNGYEGIVIAIDHDVPEDEALIQH 52
 hICACC-1: --MGPFKSSVFILILHLLEGALSNSL-----IQLNNNGYEGIVVAIDPNVPEDETLIQQ 52
 hICACC-2: MTQRSIAGPICNLKFVTLLVALSSELPFLGAGVQLQDNGYNGLLIAINPQVPENQNLISN 60

mICACC-1: IKDMVTQASPYLFATGKRFYFKNVAILIPESWKAKPEYTRPKLETFKNADVLVSTTSPL 112
 hICACC-1: IKDMVTQASLYLFATGKRFYFKNVAILIPETWTKADYVRPKLETYKNADVLVAESTPP 112
 hICACC-2: IKEMITEASFYLFNATKRRVFFRNIKILIPATWKA-NNSKIKQESYEKANVIVTDWYRA 119

mICACC-1: GNDEPYTEHIGACGEKGIRIHLTPDFLAGKKLTQ-YGPQDRTFVHEWAHFRWGVFNEYNN 171
 hICACC-1: GNDEPYTEQMGNCGEKGERIHLTPDFIAGKKLAE-YGPQGRAFVHEWAHLRWGVFDEYNN 171
 hICACC-2: HGDDPYTLQYRGCGKEGKYIHFTPNNFLNDNLTAGYGSRGRVFVHEWAHLRWGVFDEYNN 179

mICACC-1: DEKFYLS-KGKPQAVRCSAAITGKNQVRRCQGGSCITNGKCVIDRVTGLYKDNCVFVPDP 230
 hICACC-1: DEKFYLS-NGRIQAVRCSAGITGTNVVKCQGGSCYTK-RCTFNKXTGLYEKGCEFVQLS 229
 hICACC-2: DKPFYINGQNQIKVTRCSSDITG---IFVCEKGPCPQE-NCIISK---LFKEGCTFIYNS 232

mICACC-1: HQNEKASIMFNQNINSVVEFCTEKNHNQEAPNDQNQRCNLRSTWEVIQESEDFKQTPM- 289
 hICACC-1: RQTEKASIMFAQHVDSIVEFCTEQHNKEAPNKQNQKCNRSTWEVIRDSEDFKKTPM- 288
 hICACC-2: TQSATASIMFMRSLSVVEFCNASTHNQEAPNLQNQMCSLRSAWDVITDSADFHHSFPMN 292

mICACC-1: -TAQPPAPTFSLIQLIGQRIVCLVLDKSGSMLNDDRLNRMNQASRLFLLQTVEQGSWVGMV 348
 hICACC-1: -TTQPPNPTFSLLIQLIGQRIVCLVLDKSGSMATGNRNLNQAGQLFLLQTVELGSWVGMV 347
 hICACC-2: GTELPPPPTFSLVEAGDKVCLVLDASSKMAEADRLLQLQQAAEFYLMQIVEIHTFVGIA 352

mICACC-1: TFDSAAYVQSELKQLNSGADRDLLIKHLPTVSAGGT--SICSGLRTAFTVIKKY-PTDG 405
 hICACC-1: TFDSAAYVQSELIQINSGSDRDTLAKRLPAAASGGT--SICSGLRSRAFTVIRKKY-PTDG 404
 hICACC-2: SFDSKGEIRAQLHQINSNDDRKLVSYLPPTVSAKTDISICSGLKKGFEVVEKLNGKAYG 412

mICACC-1: SEIVLLTDGEDNTISSLFDLVQSGAIIHTVALGPAAAKELEQLSKMTGGLQTYSSDQVQ 465
 hICACC-1: SEIVLLTDGEDNTISGCFNEVKQSGAIIHTVALGPSAAQELEELSKMTGGLQTYASDQVQ 464
 hICACC-2: SVMILVTSGDDKLLGNCLPTVLSSGSTIHSIALGSSAAPNLEELSRLTGGLKFFVFDISN 472

mICACC-1: NNGLVDAFAALSSGNAIAQHSIQLESRGVNLQNNQWMNGSVIVDSSVGKDTLFLITWTT 525
 hICACC-1: NNGLIDAFGALSSGNGAVSQRSIQLESKGLTLQNSQWMNGTVIVDSTVGKDTLFLITWTT 524
 hICACC-2: SNSMIDAFSRISSGTGDIFQQHQIQLESTGENVKPHQLKNTVTVDNTVGNDTMFLVTWQA 532

mICACC-1: H-PPTIFIWDPGV--QNGFILDTTKVAYLQVPGTAKVGFWKYSIQ---ASSQTLTLT 579
 hICACC-1: Q-PPQILLWDPGQK--QGGFVVDKNTKMAYLQIPGIAKVGTVKYSLO---ASSQTLTLT 578
 hICACC-2: SGPPETIILFDPDGRKYYTNNFITNLTFRTASLWIPGTAKPGHWTYTLNNNTHHSQALKVT 592

FIG. 5B

mICACC-1: VTSRAASATLPPITVTPVVKNTGKFPSPVTVYASIRQGASPILRASVTALIESVNGKTV 639
hICACC-1: VTSRASNATLPPITVTSKTNKDTSKFPSPVYANIRQGASPILRASVTALIESVNGKTV 638
hICACC-2: VTSRASNNSAVPPATVEAFVERDSLHFPHPVMIYANVKQGFYPILNATVTATVEPETGDPV 652

mICACC-1: TLELLDNGAGADATKNDGVYSRFFTAFDANGRYSV рКИWALGGVTSDRQRAAPPKNRAMYI 699
hICACC-1: TLELLDNGAGADATKDDGVYSRYFTTYDTNGRYSV рKVRALGGVNAARRRVIPQQSGALYI 698
hICACC-2: TLRLLDDGAGADVIKNDGIYSRYFFSFAANGRYSLKVHVNHSPSISTPAHSIPGSHAMYV 712

mICACC-1: DGWIEDGEVRMNPPRPETS -- YVQDKQLCFSRTSSGGSFVATNVPAAPIPDLFPPCQIT 757
hICACC-1: PGWIENDEIQWNPPRPEINKDDVQHKQVCFSRTSSGGSFVASDVPN-APIPDLFPPGQIT 757
hICACC-2: PGYTANGNIQMNAPKSVGR-NEEERKGFSRVSSGGSFVLGVPA-GPHPDVFPPCKII 770

mICACC-1: DLKASIQGQNLVNLWTAPGDDYDHGRASNYIIRMSTSIVDLRDHFNTSLQVNTTGLIPK 817
hICACC-1: DLKAEIHGGSLINLTWTAPGDDYDHGTAHKYIIRISTSILDLRDKFNESLQVNTTALIPK 817
hICACC-2: DLEAVKVEEELT-LSWTAPGEDFDQGQATSYEIRMSKSLQNIQDDFNNAILVNTSKRNPQ 829

mICACC-1: EASSEEIFEFELGGNTFG-----NG-----TDIFIAIQAVDKSNLKSEISNIARVSFIP 867
hICACC-1: EANSEEVFLFKPENITFE-----NG-----TDLFIAIQAVDKVDLKSEISNIARVSLFIP 867
hICACC-2: QAGIREIIFTFSPQISTNGPEHQPNGETHESHRIYVAIRAMDRNSLQSAVSNIAQAPLFIP 889

mICACC-1: AQEP---PIPEDSTPPCPDISINSTIPGIHVЛKIMWKWLGEMQVTLGLH----- 913
hICACC-1: PQTTPETPSDETSAPCPNIHINSTIPGIHILKIMWKWIGELQLSIA----- 914
hICACC-2: PNSD---PVPARDYLILKGVLТАMGLIGIICLIVVTHHTLSRKKRADKKENGTKLL 943

FIG. 6

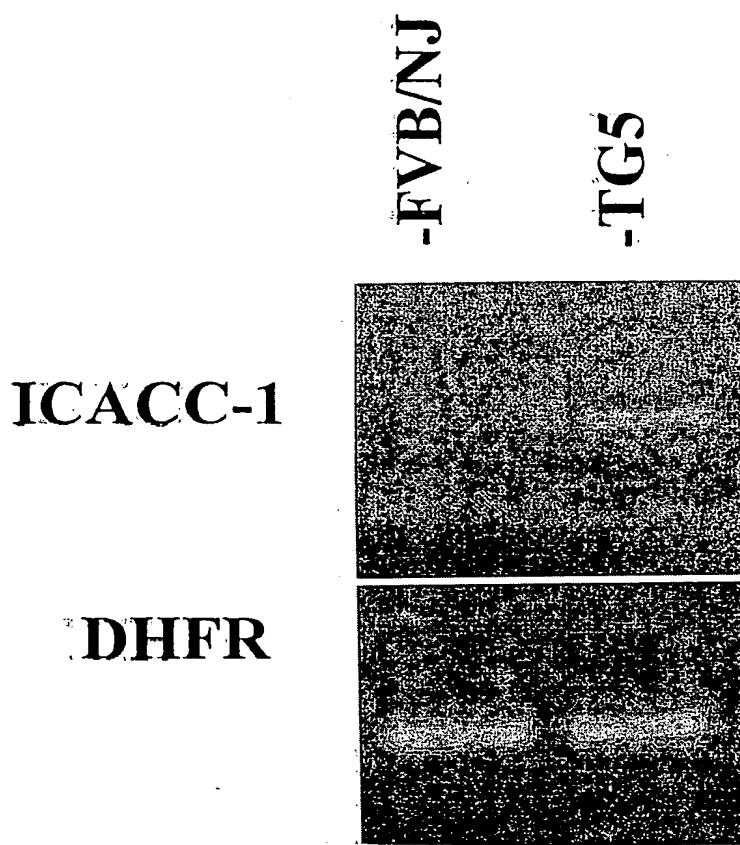


FIG. 7

ICACC-1



DHFR

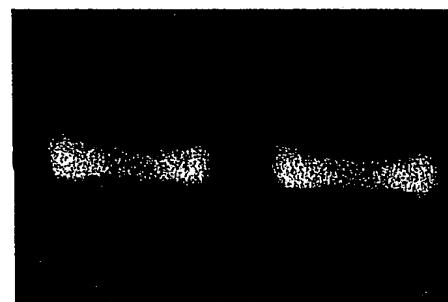


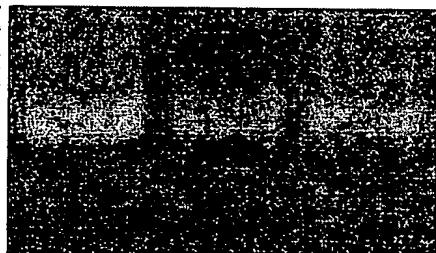
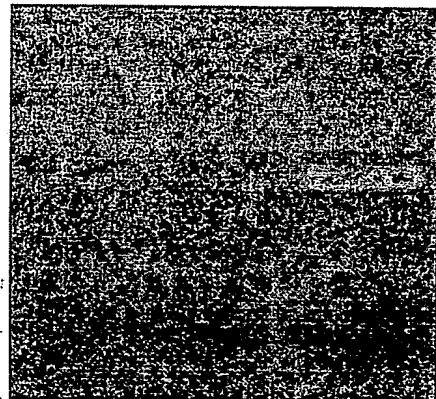
FIG. 8

C57/B6

C57/B6 +BSA

C57/B6 +IL-9

ICACC-1



DHFR

IL-9 Transgenic Mouse

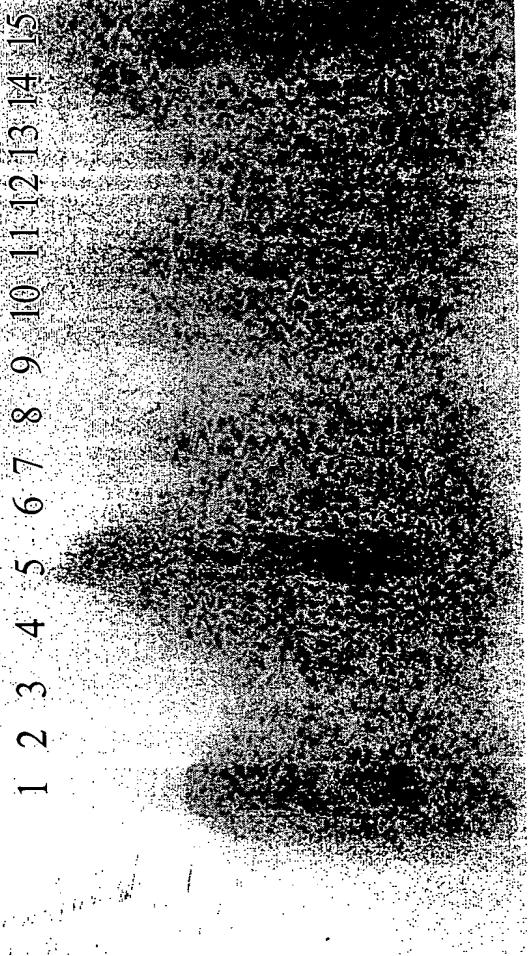


FIG. 9A

Normal Mouse

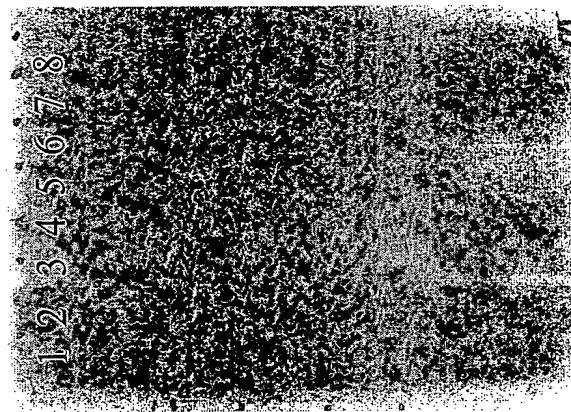


FIG. 9B

1. uterus
2. thymus
3. testis
4. stomach
5. Spleen
6. sml. intestine
7. ovary
8. muscle
9. lymph nodes
10. lung
11. liver
12. kidney
13. heart
14. colon
15. brain

1. heart
2. brain
3. spleen
4. lung
5. liver
6. skeletal muscle
7. kidney
8. testis

FIG. 10A

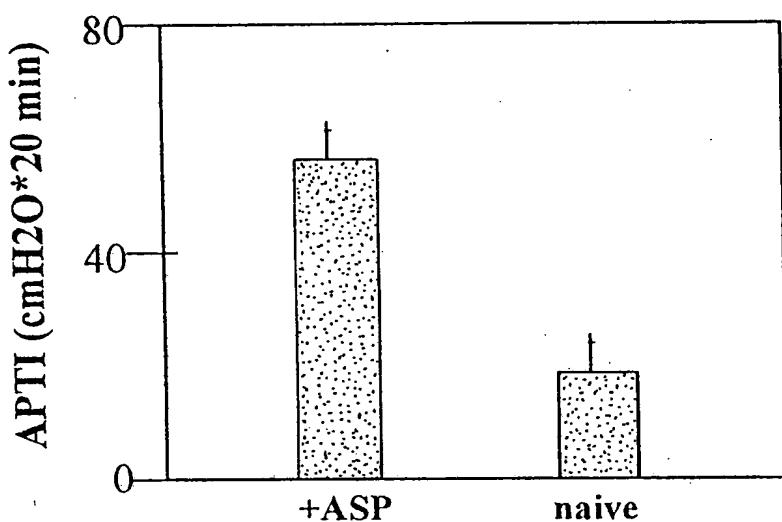
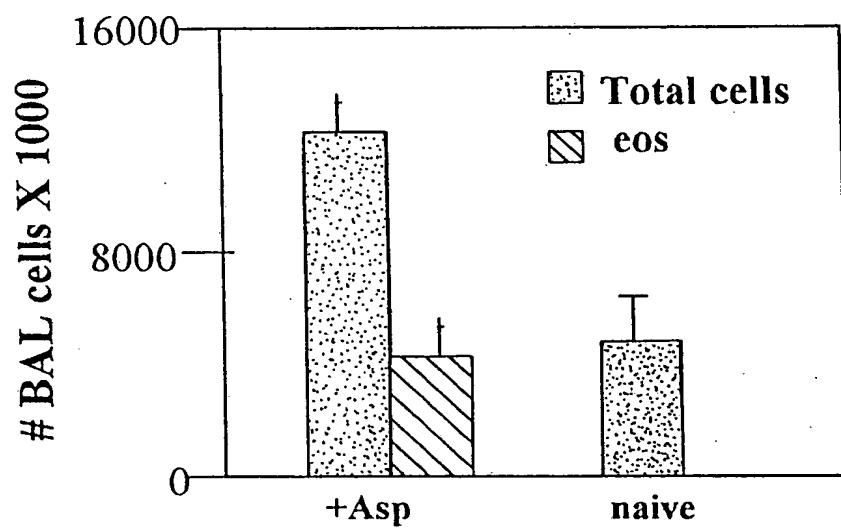


FIG. 10B



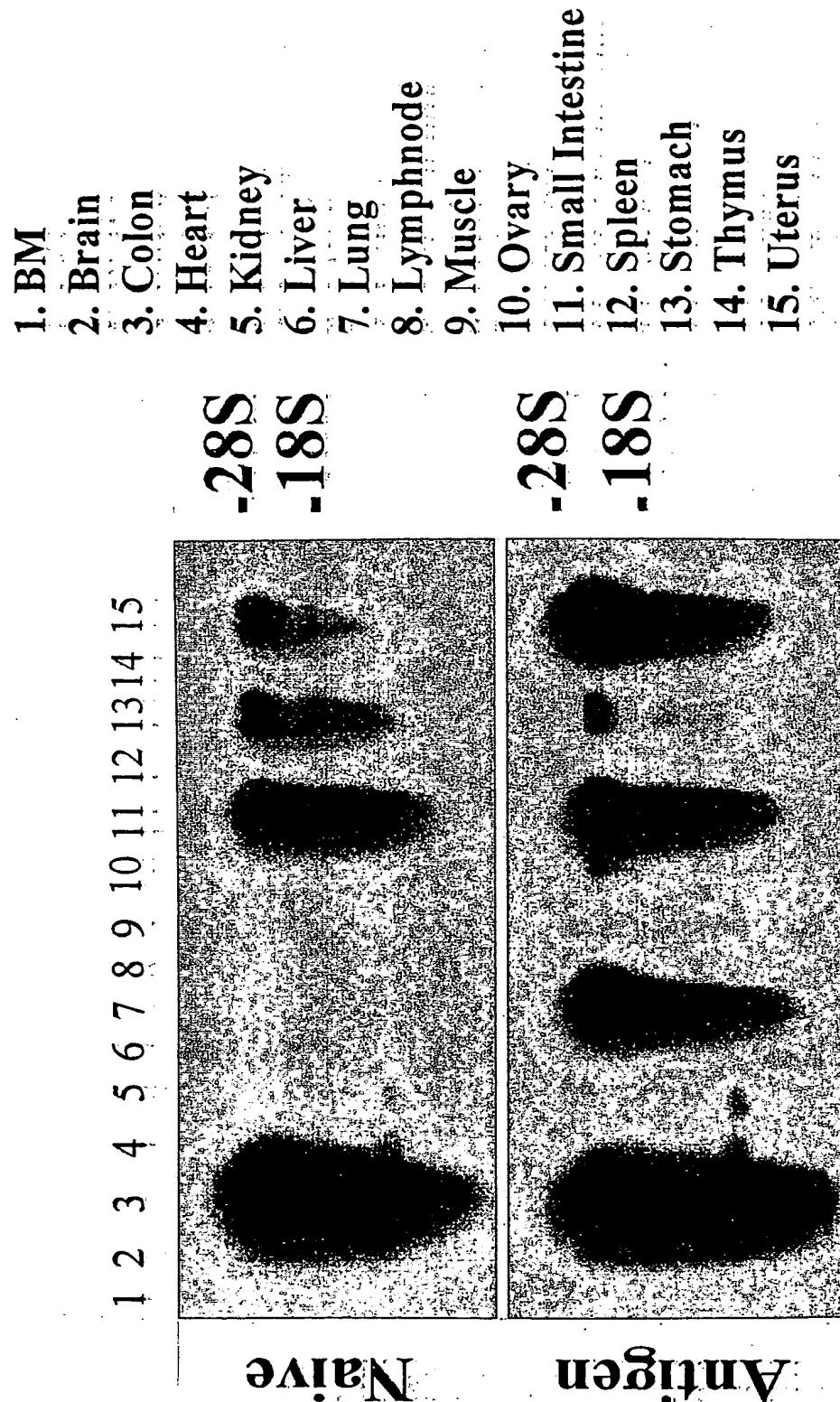


FIG. 12A

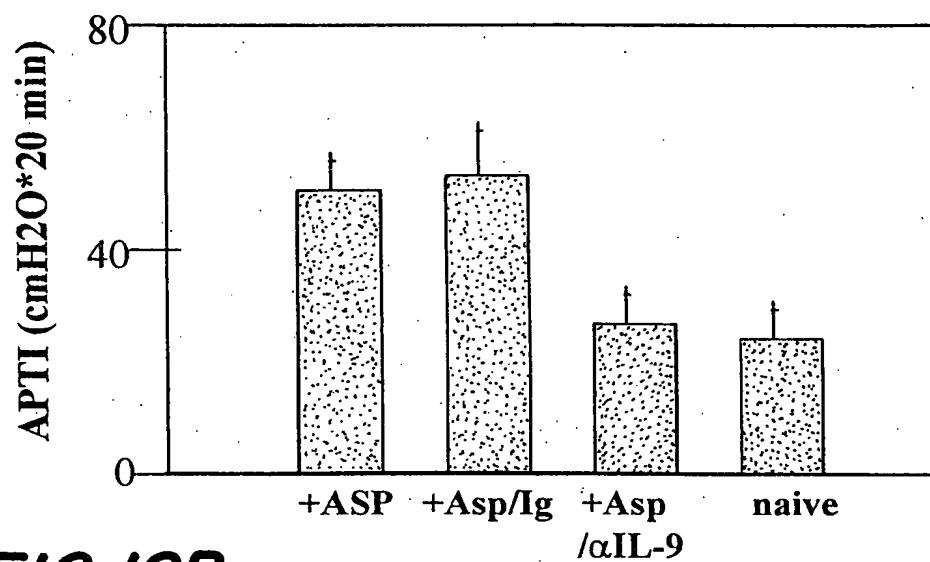


FIG. 12B

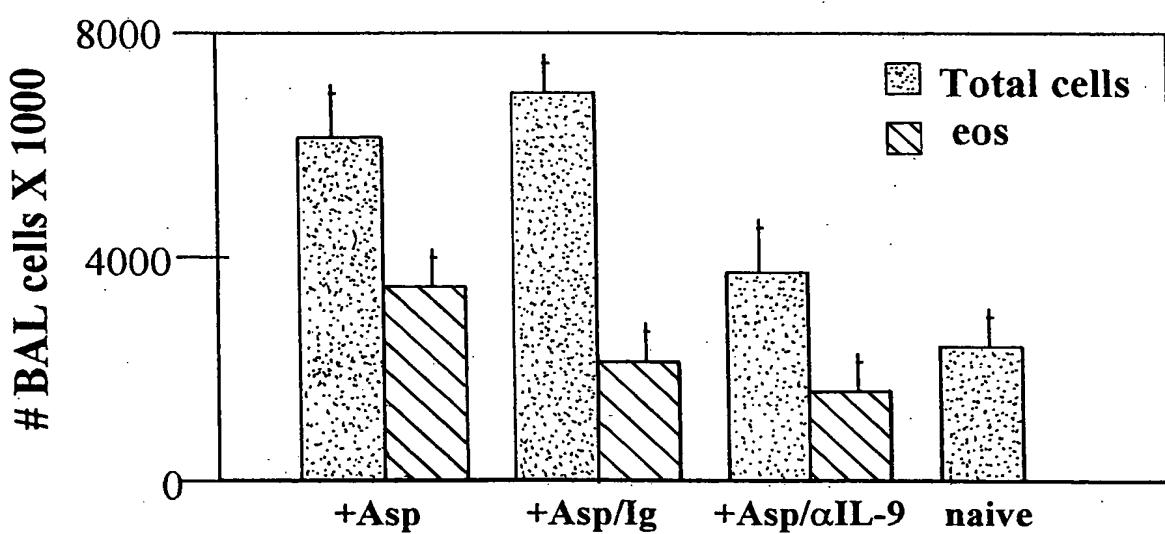


FIG. 13

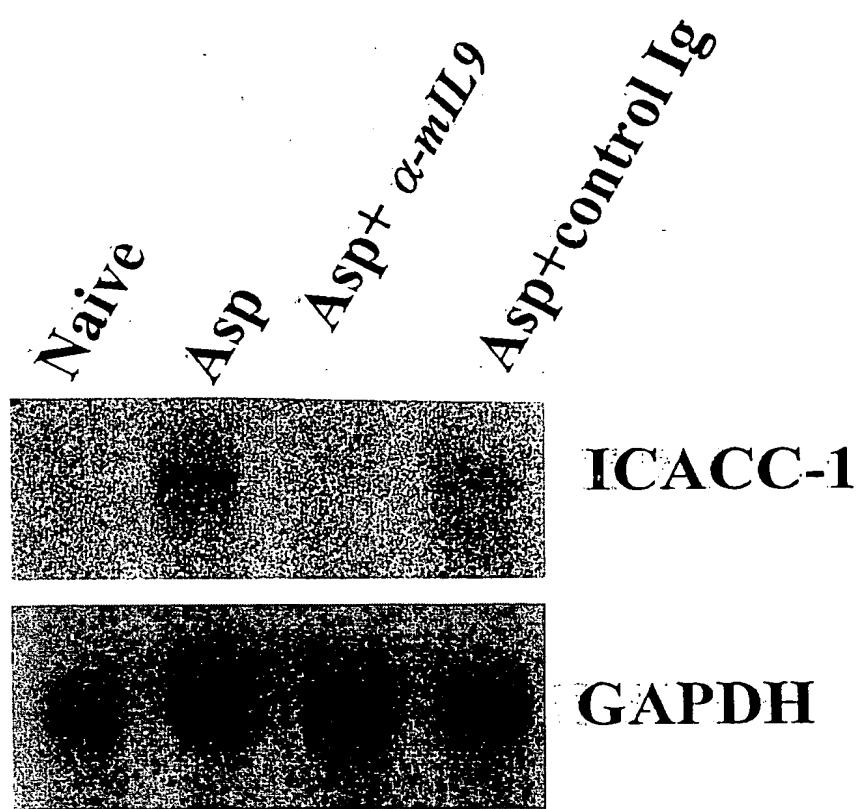


FIG. 14

NHBE

- **IL-9**

hICACC-1

γ -Actin

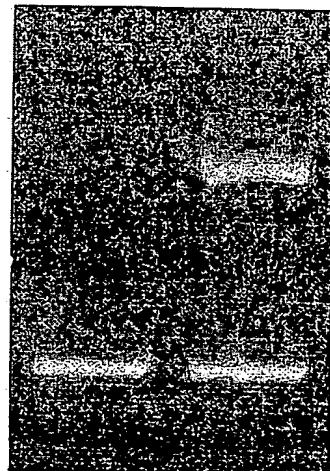


FIG. 15

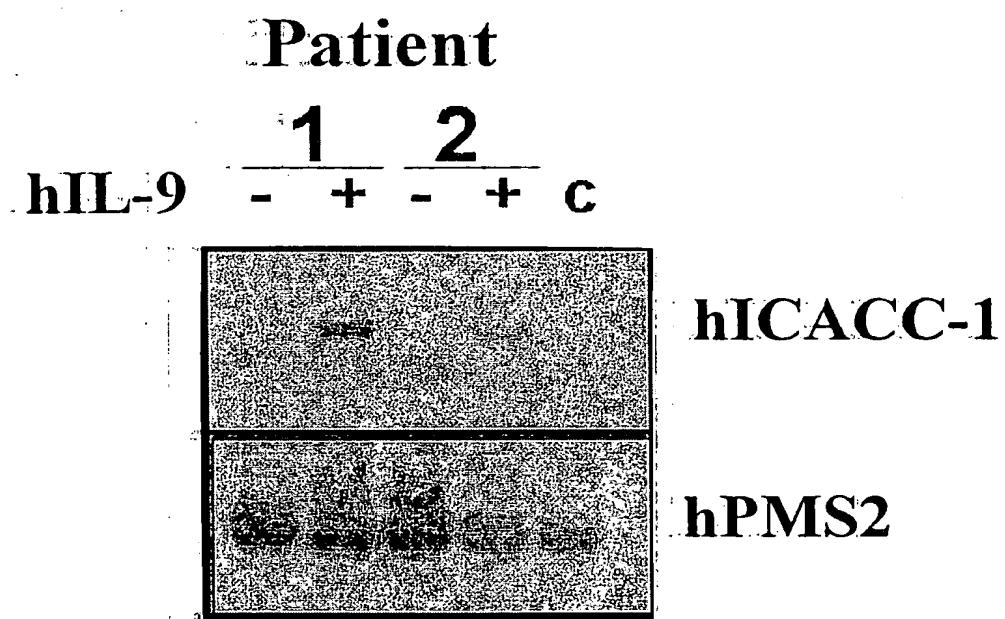


FIG. 16

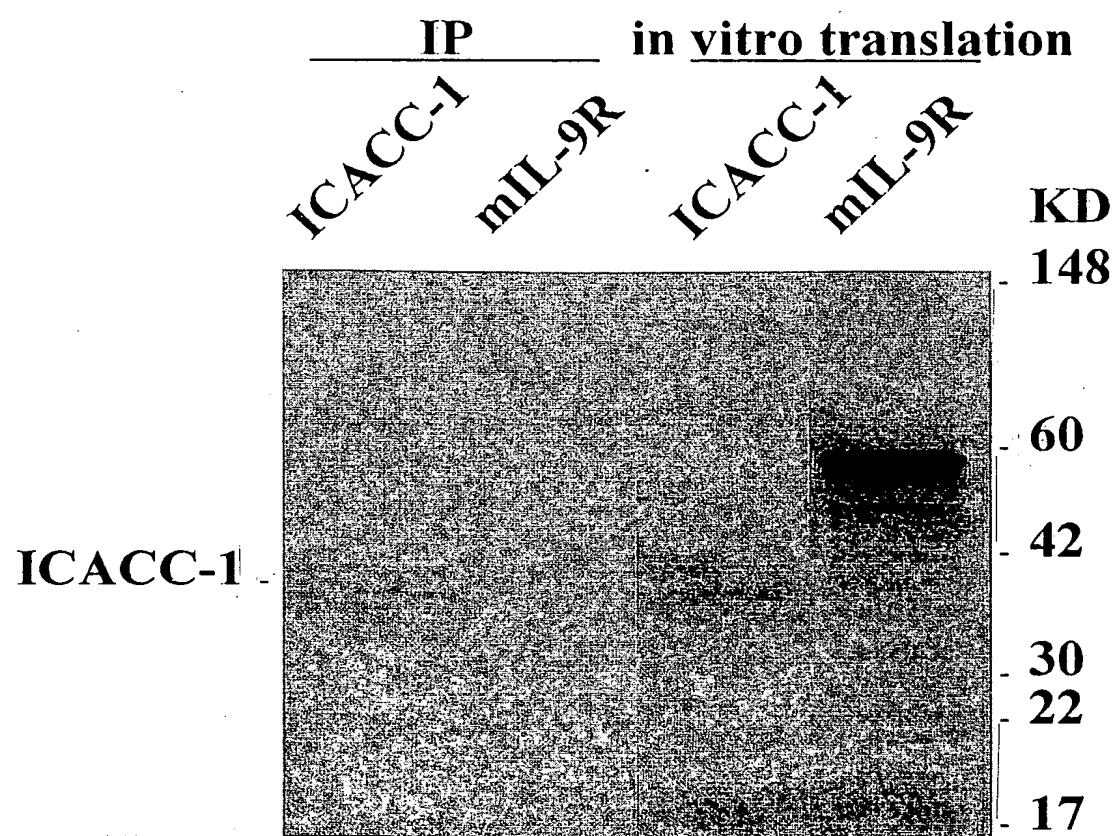


FIG. 17

